

ModelLab: A Cloud-Based Platform to Support Advanced Geospatial Modeling of Earth Observation Data, Phase II

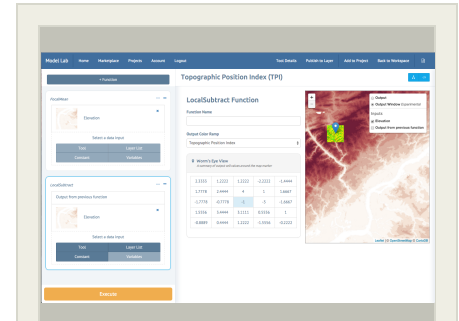
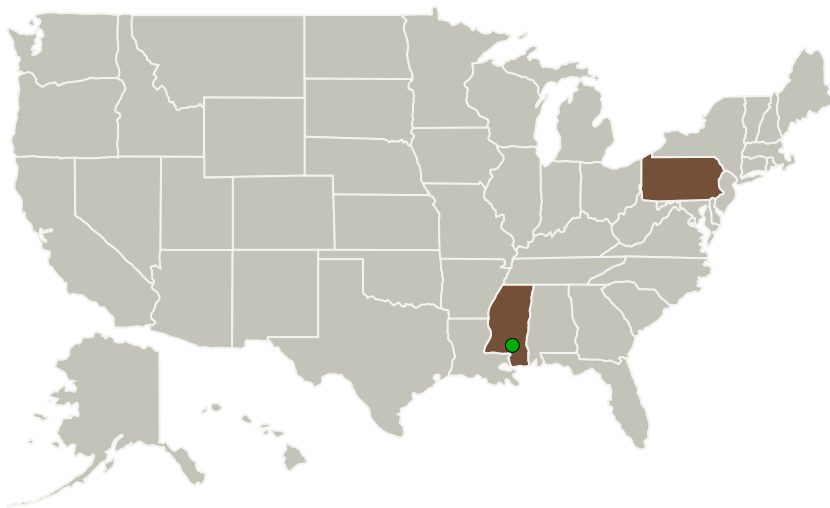
Completed Technology Project (2016 - 2019)



Project Introduction

In order to promote and facilitate broader use of NASA and other Earth observation data sources, the Phase I research focused on development of a cloud-based distributed computation platform for building, storing, and executing complex geospatial models. Widespread access to frequent, high-resolution Earth observation imagery has created the need for innovative tools like ModelLab that will help individuals and organizations to effectively access, analyze, edit, and visualize remotely sensed data in transformative new ways without years of specialized training or ongoing investments in proprietary software and technology infrastructure. The Phase II production application will be built as an on-demand, browser-based service that provides a unique assemblage of online authoring tools, searchable libraries of geospatial modeling functions, educational materials, distributed computing capabilities enabled by the open source GeoTrellis framework, and access to NASA and other sensor data that can be applied to contemporary geospatial challenges in a broad range of domains. Further, it will both simplify and shorten the development process for a host of model-driven software applications by providing developers with a growing catalog of well-crafted models to build and innovate from. Specific goals for Phase II include adding a searchable gallery of geospatial models that can be harnessed to perform specific tasks, enhancing the user experience, adding support for user data upload, extending the data repository with national and global-scale datasets, providing access to NASA APIs, enabling multi-band processing capabilities, and performing iterative testing with an expanded Advisory Team and a larger group of students and potential customers.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Azavea, Inc.	Lead Organization	Industry Historically Underutilized Business Zones (HUBZones)	Philadelphia, Pennsylvania
● Stennis Space Center(SSC)	Supporting Organization	NASA Center	Stennis Space Center, Mississippi

Primary U.S. Work Locations

Mississippi Pennsylvania

Project Transitions

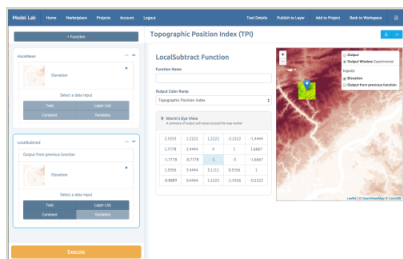
▶ **April 2016:** Project Start

✓ **April 2019:** Closed out

Closeout Documentation:

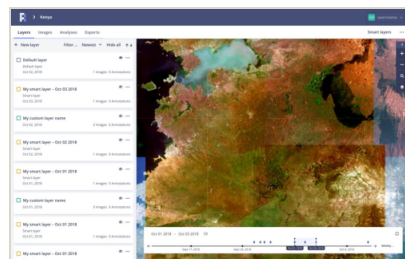
- Final Summary Chart(<https://techport.nasa.gov/file/139756>)

Images



Briefing Chart Image

ModelLab: A Cloud-Based Platform to Support Advanced Geospatial Modeling of Earth Observation Data, Phase II
(<https://techport.nasa.gov/image/134276>)



Final Summary Chart Image

ModelLab: A Cloud-Based Platform to Support Advanced Geospatial Modeling of Earth Observation Data, Phase II
(<https://techport.nasa.gov/image/134136>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Azavea, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

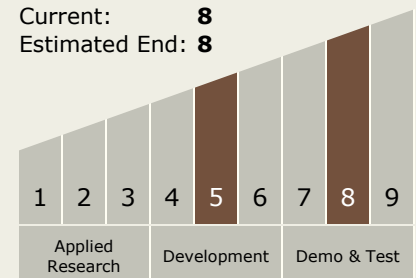
Carlos Torrez

Principal Investigator:

Robert Cheetham

Technology Maturity (TRL)

Start: 5
Current: 8
Estimated End: 8



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Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
 - └ TX11.4 Information Processing
 - └ TX11.4.4 Collaborative Science and Engineering

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System